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EXAMINER	
AHMED, ENAM	

ART UNIT	PAPER NUMBER
2112	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/534,359	VALADON, CYRIL	
	Examiner	Art Unit	
	ENAM AHMED	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 11 February 2009.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 20-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 20-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Non – Final Rejection

This office action is in reply to applicants amendment filed on 2/11/09.

The Examiner welcomes the applicant's to contact the Examiner regarding the case and full consideration will be respectfully given by the Examiner.

Response to applicant's arguments

The applicants arguments have been fully considered, and are found persuasive only to the extent that new reference Xu (U.S. Patent No. 6,829,313) teaches using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format (column 15, line 60 – column 16, line 22); determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal (column 16, lines 22-39) and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format (column 16, lines 40-57).

Response to applicant's remarks

With respect to claim 20 on page 7, the applicant mentions there is nothing in the Cox and Sundberg reference that addresses the following section of pending claim 20: "and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format."

The Examiner respectfully agrees with the statement, however points out new reference Xu (U.S. Patent No. 6,829,313) teaches "and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format" (column 16, lines 40-57).

With respect to claim 20 on page 8, the applicant mentions claim 20 further recites "using a Viterbi algorithm to determine trellis metrics for a point in said signal ...determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme. This is quite different from what is presented in the Cox and Sundberg reference, p. 59/section B, where the decision on the contents of the transmitted signal is based on the comparison of the metrics at both the starting point and the end point in the trellis.

The Examiner respectfully agrees with the statement, however points out new reference Xu (U.S. Patent No. 6,829,313) teaches using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block

according to the given candidate format (column 15, line 60 – column 16, line 22); and determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal (column 16, lines 22-39).

35 U.S.C. 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 20, 28 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 20, 28 and 36 the Examiner is not clear as to what exactly is meant by “candidate formats”. The specification does not provide proper clarification as to how “ candidate formats” are defined. Further, claim 28 uses the term “adapted” which the Examiner suggests amending in order to avoid confusion.

35 U.S.C. 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

With respect to claim 36, the preamble mentions a data carrier containing program code for causing data processing apparatus to perform a method, however the Examiner does not see any machine or hardware in the body of the claim in order to execute or process the steps. As per In Re Bilski, 545 F.3d 943, 88 USPQ2d 1385, the claim must be tied to a particular machine or apparatus or transforms a particular article to a different state or thing. Further, the Examiner recommends amending the preamble which states a "data carrier" containing program code for causing data processing apparatus to perform a method in order to avoid any other possible 35 U.S.C. 101 issues. A suggestion from the Examiner may be “computer readable storage medium having program code when executed by a processor”.

<u>35 U.S.C. 103</u>

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 20, 23-24, 28, 31-32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) in view of Xu (U.S. Patent No. 6,829,313).

With respect to claims 20, 28 and 36 the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches performing a test on candidate formats in turn but refraining from testing further candidate formats once a candidate format passes the test, wherein the test determines whether or not a candidate format is likely to be the format used on the signal and the test, for a given candidate format, comprises (pg. 59 – B. Decoding Algorithms for tailbiting codes) and decoding a part of said signal ending at said point (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm). The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes does not teach using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format decoding a part of said signal ending at said point; determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format. The Xu

reference teaches using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format decoding a part of said signal ending at said point (column 15, line 60 – column 16, line 22); determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal (column 16, lines 22-39) and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format (column 16, lines 40-57). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the references An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes and Xu to incorporate using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format decoding a part of said signal ending at said point; determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format into the claimed invention. The motivation for using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format decoding a part of said signal ending at said point; determining from said metrics the likelihood of occupation at said point

of an end state of an encoding scheme used to create the encoded signal and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format is for improved system performance.

With respect to claims 23 and 31, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches wherein the likelihood of occupation obtained from said metrics is used to determine whether said checking step is to be performed (pg. 60 – C. A Circular Viterbi Algorithm).

With respect to claims 24 and 32, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches wherein the likelihood of occupation obtained from said metrics is used to determine whether said decoding step is to be performed (pg. 60 – C. A Circular Viterbi Algorithm).

Claims 25-27 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg), Xu (U.S. Patent No. 6,829,313) in view of Ramesh et al. (U.S. Patent No. 6,917,629).

With respect to claims 25 and 33, all of the limitations of claims 20 and 28 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference does not teach wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part. The Ramesh et al. reference teaches wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part (column 2, lines 13-29). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Ramesh et al. to incorporate wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and

comparing the corroborative checksum with the said checksum part into the claimed invention. The motivation for wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part is to provide a more robust communications system allowing for both the detection and correction of bit transmission errors (column 5, lines 63-64 – Ramesh et al. reference).

With respect to claims 26 and 34, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference teaches wherein said decoded part contains said data part of the candidate block (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm).

With respect to claims 27 and 35, all of the limitations of claims 25 and 33 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference does not teach wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate

checksum value as a starting point. The Ramesh et al. reference teaches wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point (column 2, lines 13-29). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Ramesh et al. to incorporate wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point into the claimed invention. The motivation for wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point is to provide a more robust communications system allowing for both the detection and correction of bit transmission errors (column 5, lines 63-64 – Ramesh et al. reference).

Claims 21-22 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and

Carl-Erik W. Sundberg), Xu (U.S. Patent No. 6,829,313) in view of Kuwazoe (U.S. Pub. No. 2002/0051505).

With respect to claims 21 and 29, all of the limitations of claims 20 and 21 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) does not teach wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point. The Kuwazoe reference teaches wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point ([0007] and [0011]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Kuwazoe to incorporate wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point into the claimed invention. The motivation for wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point is for high speed with a simple circuit configuration ([0079] - Kuwazoe reference).

With respect to claims 22 and 30, all of the limitations of claims 21 and 22 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) does not teach wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point. The Kuwazoe reference teaches wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point ([0013 - 0014] and [0024]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Kuwazoe to incorporate wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point into the claimed invention. The motivation for wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point is for high speed with a simple circuit configuration ([0079] - Kuwazoe reference).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enam Ahmed whose telephone number is 571-270-1729. The examiner can normally be reached on Mon-Fri from 8:30 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman, can be reached on 571-272-3644.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

4/20/09

/MUJTABA K CHAUDRY/

Primary Examiner, Art Unit 2112